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EXAMINER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### ***Response to Arguments***

Applicants argue one of ordinary skill in the art would not have been motivated to combine the Kano, Suhara, and Yoriki references. Specifically, Applicants argue the problem solved by the sensor of Kano and that of Suhara, which is configured to adjust the stroke of the suction nozzle, is different from the Yoriki sensor, which is configured to detect a bent or missing nozzle.

The Examiner respectfully disagrees. Both Suhara and Yoriki discuss imaging a nozzle to detect some sort of defect or wear. In Suhara, the imaging station is provided after picking up a component because two functions are performed at this station (see col. 34, Ins. 44-61): *the first function* is imaging of the component, to detect to detect a lower end of the component, so that the substrate onto which the component is to be mounted can be lowered or raised to adjust the stroke length at the time of placing the component (see col. 36, Ins. 8-36). As a *second function*, at the same station, the position of the lower end of the nozzle is determined, thereby determining wear of the nozzle. This information is later used to adjust a stroke length when picking up a component. It is readily apparent from the disclosure of Suhara that this second function of the imaging process could be performed at any time prior to picking up a new component. However, since a single structural element can perform both, it makes sense to perform the second function at the same time as performing the first, since this saves time and does not require a separate sensor for performing the second function, i.e. detecting wear on the nozzle. However, there is nothing preventing Suhara from adding a separate sensor to perform this detecting, and it is clear that this sensor could

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be placed after the mounting station, as long as the stroke length is adjusted based on the data from this sensor prior to picking up a new component. Yoriki was cited because it provides further evidence that detection of nozzle defects can be performed either before or after picking up components. In light of Suhara and Yoriki, it is deemed it would have been obvious to provide the apparatus of Kano with a sensor for measuring the position of the lower end of the nozzle, as claimed, in order to adjust the stroke length prior to picking up a component, and it would have been obvious to place this sensor after the mounting station, because the location of the sensor is not relevant, as long as it provides the data for adjusting the stroke length prior to picking up a new component.

Applicants further argue "Yoriki's sensing operation may be performed at any time during the mounting cycle because Yoriki's sensor is configured to detect whether the nozzle is bent or missing," whereas "the effect of a sensing operation for adjusting the stroke of a suction nozzle depends on the timing in the mounting cycle at which the sensing operation is performed."

The Examiner respectfully disagrees. As discussed above, Suhara is concerned with detecting a nozzle defect too, namely to detect if the nozzle is worn and to adjust the stroke length prior to picking up a new component. While it is true that a timing of this detecting is critical to the extent it must be performed before adjusting the stroke length, it makes no difference whether the detecting is performed before mounting a component or after mounting the component. See col. 37, lns. 33-65 in Suhara. It is clear from Suhara that the stroke length is adjusted just prior to picking up a new

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component, and, therefore, the detecting of nozzle wear or other nozzle defects can take place at any other time during the cycle prior to this stroke-adjustment operation. Yoriki simply shows that it is known to detect nozzle defects either before or after mounting a component.

It is therefore deemed the cited art renders obvious the claimed invention, and the rejection is therefore maintained.

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